

What is claimed is:

1. A semi-crystalline, largely isotropic, porous pitch-based foam produced from a mesophase carbon derived from a petroleum or coal tar pitch exhibiting a softening point above about 300° C, and having a density of between about 0.1 and about 0.8 g/cm³.

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2. The porous coal-based product of claim 1 wherein said coal tar or petroleum pitch exhibits a softening point between about 300°C and about 400° C.

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3. The porous coal-based product of claim 1 having a compressive strength below about 6000 psi.

4. The porous coal-based product of claim 1 that has been carbonized.

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5. The porous coal-based product of claim 1 that has been graphitized.

6. A method for producing a carbon foam from a mesophase carbon particulate derived from a petroleum or coal tar pitch exhibiting a softening point above about 300° C, comprising:

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A) placing said mesophase carbon particulate in a mold;
B) heating said mesophase carbon particulate in said mold under a non-oxidizing atmosphere to a temperature of

between about 300° C and about 700° C and soaking at this temperature for a period of from about 10 minutes to about 1 hour to form a green foam; and

- C) controllably cooling said green foam.

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7. The method of claim 6 wherein said coal tar or petroleum pitch exhibits a softening point between about 300°C and about 400° C.

10 8. The method of claim 6 wherein said inert atmosphere is applied at a pressure of from about 0 psi up to about 500 psi.

9. The method of claim 6 wherein said temperature is achieved using a heat-up rate of between about 2° C to about 10° C per minute.

15 10. The method of claim 6 wherein said controlled cooling is accomplished at a rate of less than about 10° C/min to a temperature of about 100° C.

20 11. The method of claim 6 wherein said mesophase carbon particulate derived from a petroleum or coal tar pitch exhibiting a softening point above about 300° C is produced by thermal treatment or solvent extraction of said petroleum or coal tar pitch.

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12. A semi-crystalline, largely isotropic, porous pitch-based foam produced from a mesophase carbon derived from a petroleum or coal tar pitch exhibiting a softening point above about 300° C, and having a density of between about 0.1 and about 0.8 g/cm³ produced by a method comprising:

- A) placing said mesophase carbon particulate in a mold;**
- B) heating said mesophase carbon particulate in said mold under a non-oxidizing atmosphere to a temperature of between about 300° C and about 700° C and soaking at this temperature for a period of from about 10 minutes to about 1 hour to form a green foam; and**
- C) controllably cooling said green foam.**

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13. The semi-crystalline, largely isotropic, porous pitch-based foam of claim 12 wherein said coal tar or petroleum pitch exhibits a softening point between about 300°C and about 400° C.

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14. The semi-crystalline, largely isotropic, porous pitch-based foam of claim 12 wherein said inert atmosphere is applied at a pressure of from about 0 psi up to about 500 psi.

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**15. The semi-crystalline, largely isotropic, porous pitch-based foam of claim
12 wherein said temperature is achieved using a heat-up rate of between
about 2° C to about 10° C per minute.**

**5 16. The semi-crystalline, largely isotropic, porous pitch-based foam of claim
12 wherein said controlled cooling is accomplished at a rate of less than
about 10° C/min to a temperature of about 100° C.**

**17. The semi-crystalline, largely isotropic, porous pitch-based foam of claim
10 12 wherein said mesophase carbon particulate derived from a petroleum
or coal tar pitch exhibiting a softening point above about 300° C is
produced by thermal treatment or solvent extraction of said petroleum or
coal tar pitch.**

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